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AREA AND OWNERSHIP OF FOREST LAND IN SHASTA COUNTY, CALIFORNIA

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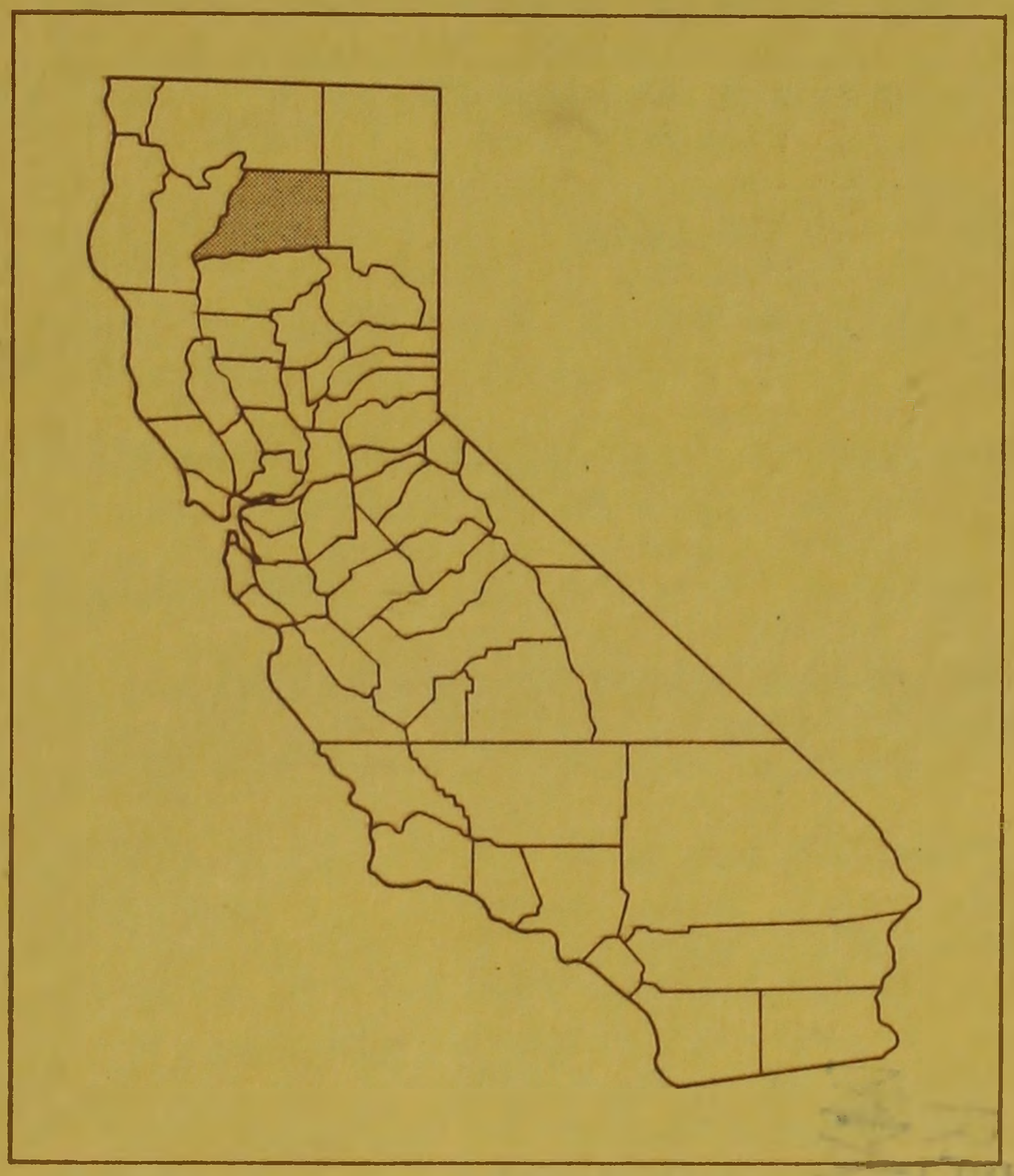

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
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SOUTHERN FOREST EXPERIMENT STATION

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The California Forest and Range Experiment Station is maintained at Berkeley in cooperation with the University of California

Agriculture--Berkeley

FOREWORD

The Forest Survey, authorized by the McSweeney-McNary Act of 1928, is a nationwide activity of the Forest Service designed to provide a comprehensive survey of the forest resource of the United States. The fivefold objective of this Survey is:

(1) To make an inventory of all forest land and the standing timber on those lands.

(2) To measure the current and probable future rate of timber growth, and the productive capacity of the forest lands.

(3) To determine the rate of timber depletion through cutting, fire, insects, disease, and other causes.

(4) To determine the present and expected requirements for lumber and other forest products.

(5) To provide, through correlation of these facts with one another and with other economic knowledge, a basis for formulating local, State, and national forest policies and management plans.

Responsibility for this work in California has been assigned the Division of Forest Economics of the California Forest and Range Experiment Station at Berkeley.

This release presents the statistics of forest area and forest land ownership in Shasta County, California, as of 1951. Besides the statistics on the extent, location, and condition of all forest lands and the timber stands on those lands, this report presents quantitative data on type and size of ownership and number and kinds of owners. Estimates of timber volume are not included as volume sampling was not designed to provide this information for single counties.

Similar statistical reports have been issued for the leading timber counties of the Coast Range Pine and Redwood--Douglas-fir Survey units. Also, major statistical reports have been published for these units which present data on forest areas, timber volumes, ownership, growth, and drain.

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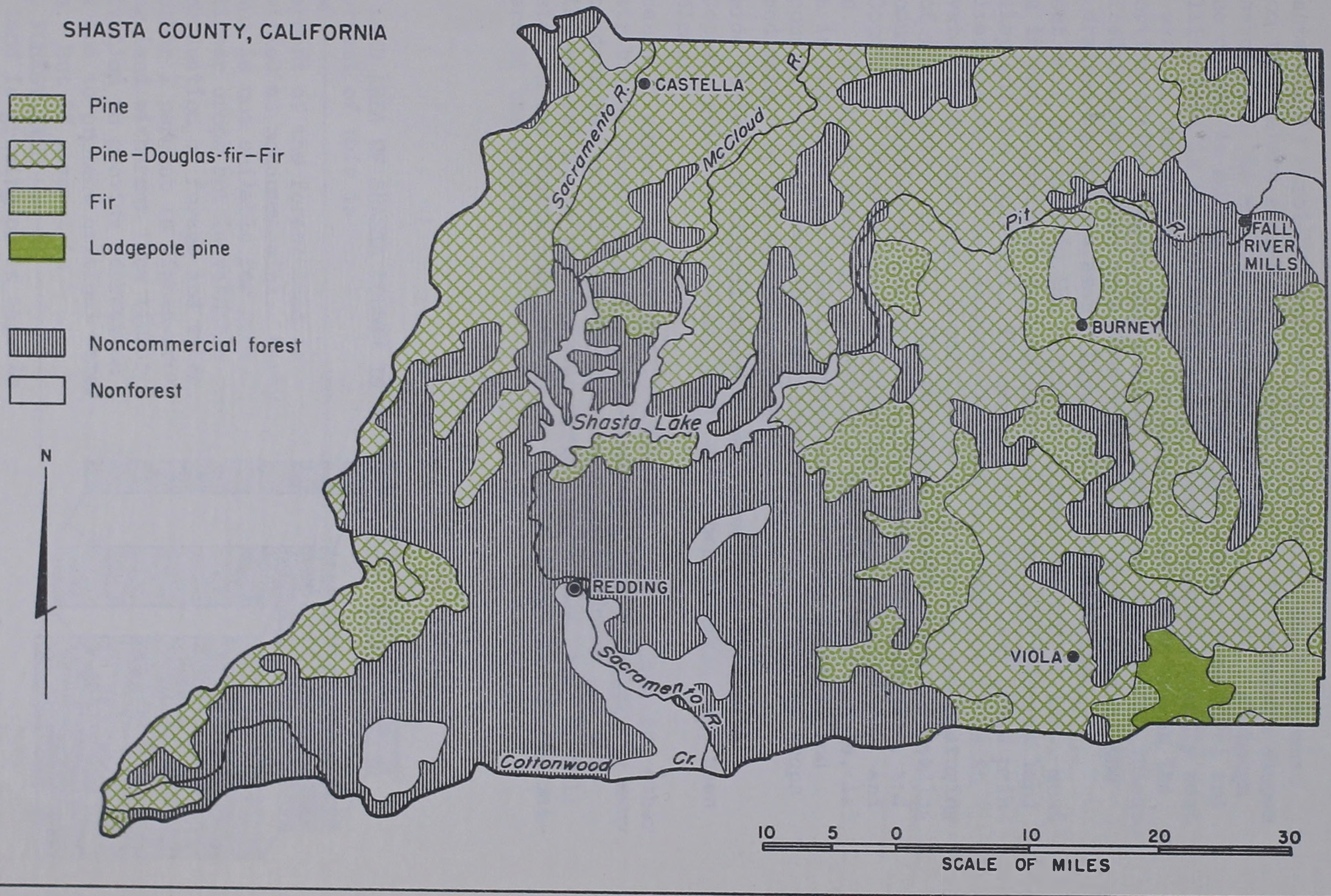
GENERALIZED TYPES OF TIMBER STANDS

SHASTA COUNTY, CALIFORNIA



FACTS ABOUT SHASTA COUNTY

Shasta County stretches across the north end of the Sacramento Valley from the eastern slopes of the Coast Range to the southern slopes of the Cascades and the western slopes of the Sierra Nevada. Although most of the county is mountainous, its topography ranges from level and gently rolling land in the valley to steep, rugged mountain country west, north and east of the valley floor. The highest elevations are in the eastern portion of the county, where Lassen Peak--the only active volcano in the United States--stands more than 10,000 feet high. Most of the county is drained by the Sacramento River and its tributaries.

About half the land in the county is commercial forest land. Most of this is in the mountainous regions surrounding the agricultural land of the valley and the foothills. The commercial forest land grows principally mixed stands of pine, Douglas-fir, and fir. Much of it is in large private timber holdings. Lumbering is the principal manufacturing industry of the county. In 1951, Shasta ranked fourth among the leading lumber-producing counties of the State, behind Humboldt, Mendocino, and Siskiyou Counties. Other major industries are agriculture, mining, and recreation. Livestock ranching, principally grazing of beef cattle, is carried on in the grass and woodland-grass areas of the foothill and mountain country. Dairy products, hogs, poultry, and cultivated crops are produced mainly on the agricultural lands of the valley.

A wide variety of mineral deposits has been found in Shasta County. Copper, gold, silver, zinc, lead, and other minerals have been mined at times.

Because of extreme variations in topography, elevations, and other natural attributes, Shasta County provides unusual opportunities for many forms of outdoor recreation. Outstanding scenic attractions are provided by the several State and National parks established here, as well as by Shasta Dam and Shasta Lake, which are listed among the largest man-made wonders of the Nation.

THE TOTAL LAND AREA OF SHASTA COUNTY IS
2,432,000 acres

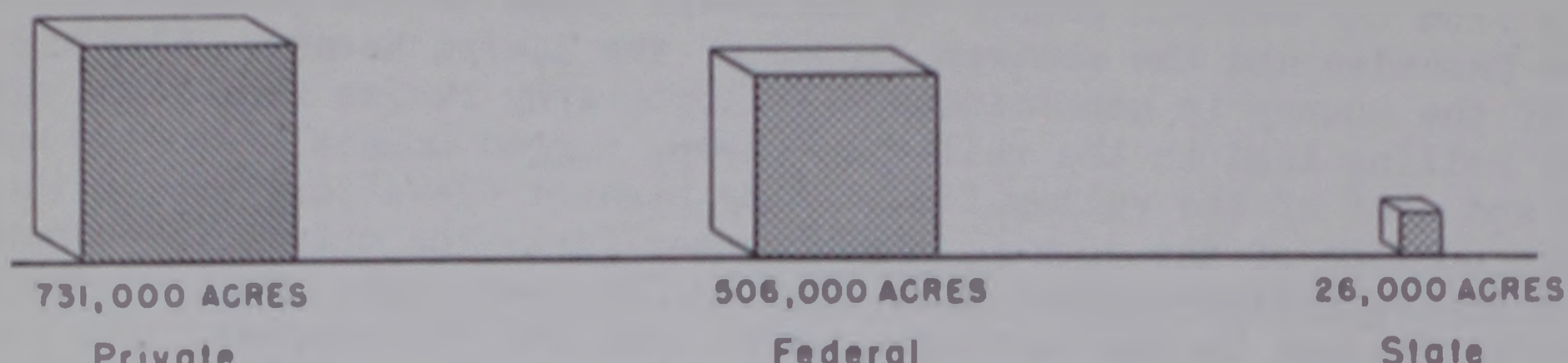
90 percent of this is
FOREST LAND
2,193,000 acres

42 percent of the forest land is classified as noncommercial. Forty percent is not suitable for growing timber crops but is valuable for production of forage and water. The other 2 percent is timber-producing land withdrawn from timber utilization to provide recreation areas and to protect critical watersheds. But 58 percent is
COMMERCIAL FOREST LAND
1,263,000 acres

This land is growing or is capable of growing usable crops of wood.

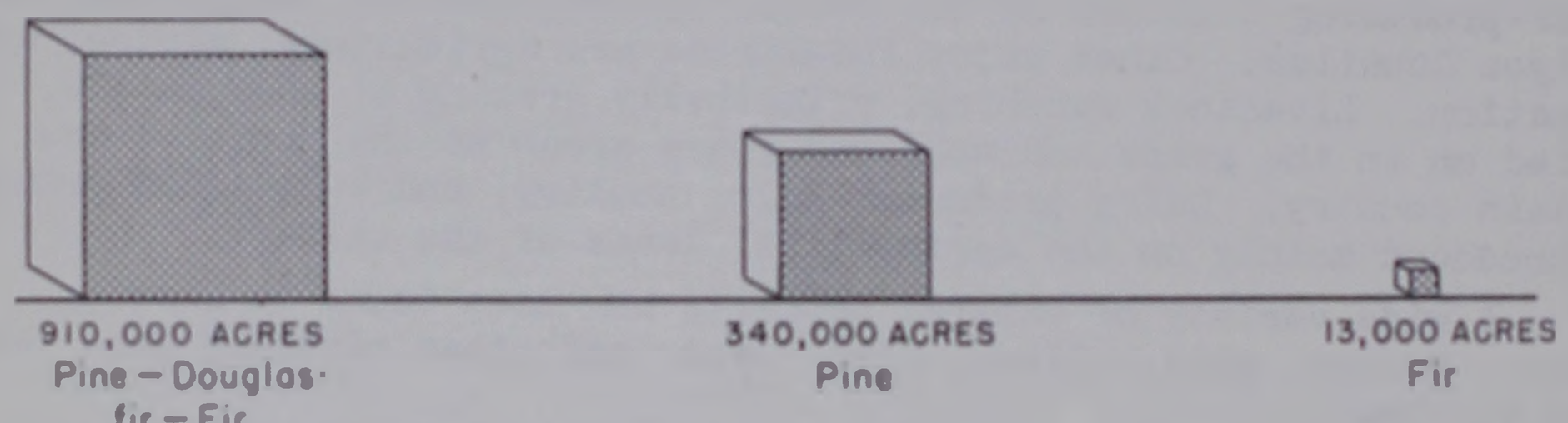
COMMERCIAL FOREST LAND

OWNERSHIP



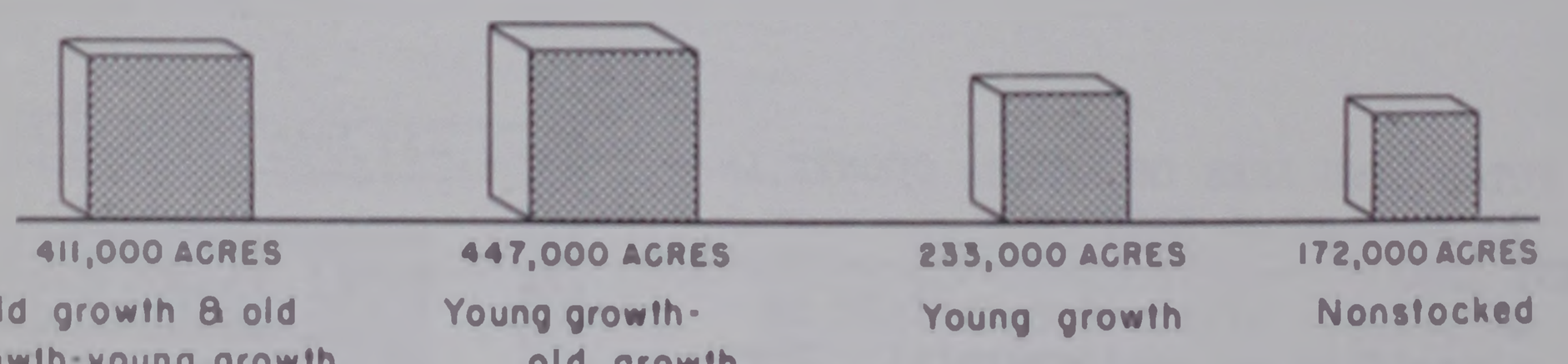
Almost three-fifths of the commercial forest land is privately owned. Most of the remainder is in Federal ownership--primarily the Shasta and Lassen National Forests. (table 1)

TYPES



Mixed stands of pine, Douglas-fir, and fir occupy nearly three-fourths of the commercial forest land. Most of the remaining timber-producing area is classified as the pine type. (table 5)

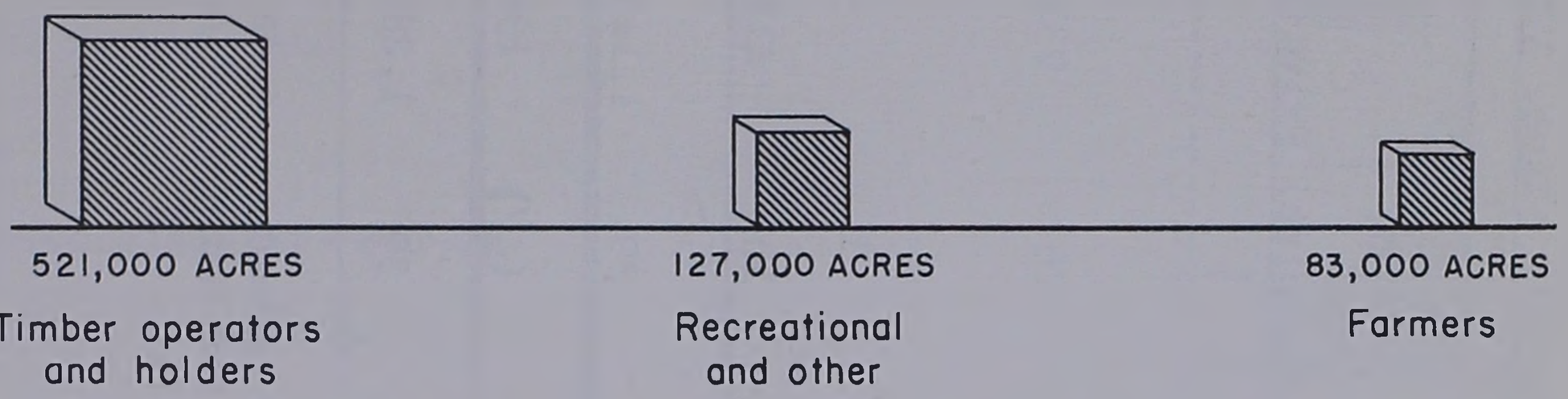
AGE CLASSES



Old-growth and young-growth--old-growth stands of timber both occupy about a third of the commercial forest land. These two classes contain most of the county's merchantable timber. Eighteen percent of the timber-producing land is occupied by stands of young growth, and 14 percent has such a small volume of commercial conifers that it is classified as nonstocked. (table 7)

PRIVATELY OWNED COMMERCIAL FOREST LAND

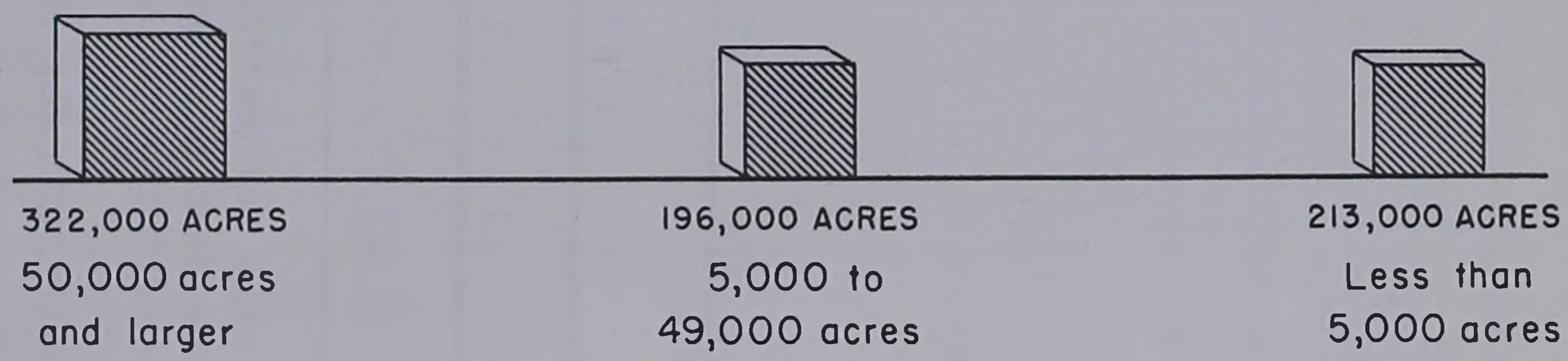
TYPE OF OWNERSHIP



Corporations and persons engaged in logging and milling operations or planning future operations own 71 percent of the privately owned commercial forest land; owners of recreational, residential, and other similar properties have 18 percent; and ranchers and farmers own 11 percent.

(table 3)

SIZE OF OWNERSHIP



44 percent of the privately owned commercial forest land is in holdings of 50,000 acres and larger. The remaining acreage is divided about equally between medium-sized holdings and holdings of less than 5,000 acres.

(table 6)

Table 1.- Total land area, by major classes of land and by ownership class, 1951

Class of land	Total All ownerships	Federally owned 1/					State, county, and municipal	Private	Unclassified
		Total federal	National forest	National park	Indian	Other 2/			
	Thousand acres								
Forest land									
Commercial	1,263	506	422	-	7	77	26	731	-
Noncommercial									
Reserved from commercial timber use	53	50	3	47	-	-	3	-	-
Unproductive for timber use 3/	877	314	153	11	6	144	10	418	135
Total forest land	2,193	870	578	58	13	221	39	1,149	135
Nonforest land	239	42	15	11	(4/)	16	(4/)	136	61
All land	5/2,432	912	593	69	13	237	39	1,285	196

1/ Because all figures in this tabulation are derived by sampling procedure, total acreage figures vary somewhat from published land acreages of public agencies listed here. For details on sampling procedures and sampling errors for various area sizes see appendix.

2/ Chiefly public domain.

3/ Includes 12,000 acres withdrawn for special use.

4/ Less than 500 acres.

5/ From "Areas of the United States 1940," U. S. Bureau of the Census.

Table 2.- Total land area, by cover type and use, 1951

Cover type and use	Area
	Thousand acres
Commercial forest land	
Pine	340
Fir	13
Pine--Douglas-fir--Fir	910
Total commercial	1,263
Noncommercial forest land	
Reserved from commercial timber use	
Pine	2
Fir	28
Pine--Douglas-fir--Fir	19
Lodgepole pine	4
Total	53
Area of low productivity for timber	
Coniferous woodland	125
Hardwood (woodland)	203
Woodland-grass	274
Chaparral	275
Total	877
Total noncommercial	930
Total forest land	2,193
Nonforest land	
Coastal sagebrush	22
Great Basin sagebrush	(1/)
Grass	87
Barren	35
Cultivated, urban, and industrial	93
Water2/	2
Total nonforest land	239
All land	2,432

1/ Less than 500 acres.
2/ Water according to survey standards of area classification but defined by the Bureau of Census as land.

Table 3.- Number of ownerships and area of privately owned land, by type of ownership, 1951

Type of ownership	Ownerships		Total land area		Commercial forest land	Non-commercial forest land	Non-forest land
	No.	Pct.	Thousand acres	Pct.	--- Thousand acres ---		
Timber-operating company	12	0.8	209	16.3	197	8	4
Timber-holding company	3	0.2	236	18.4	156	79	1
Timber-operating individual	24	1.5	138	10.7	123	12	3
Timber-holding individual	48	3.0	50	3.9	45	5	(1/)
Range livestock farming company	1	0.1	8	0.6	4	4	-
Range livestock farming individual	198	12.5	285	22.2	52	162	71
Other farmers	304	19.2	71	5.5	27	23	21
Recreational property owners	148	9.4	83	6.5	66	16	1
Other classified owners2/	844	53.3	190	14.7	61	100	29
Unclassified3/	-	-	15	1.2	(1/)	9	6
All types	1,582	100.0	1,285	100.0	731	418	136

1/ Less than 500 acres.

2/ All other landowners whose classification is known but does not logically fit the classes listed above. Examples are owners of land held for residential purposes only, mining claims, and reservoir sites.

3/ Small urban, suburban, and industrial ownerships that are too small to map and classify properly, and ownerships which for other reasons cannot be classified and placed in appropriate categories.

Table 4.- Number of ownerships and area of privately owned land, by size of ownership, 1951

Size of ownership	Ownerships		Total land area		Commercial forest land	Non-commercial forest land	Non-forest land
Acres	No.	Pct.	Thousand acres	Pct.	----- Thousand acres -----		
1- 179	1,137	71.8	102	8.4	43	44	15
180- 379	162	10.2	59	4.8	22	24	13
380- 699	109	6.9	90	7.4	28	49	13
700- 1,299	66	4.2	74	6.1	26	39	9
1,300- 2,599	47	3.0	99	8.1	22	59	18
2,600- 4,999	31	2.0	108	8.9	47	44	17
5,000- 9,999	13	0.8	62	5.1	30	24	8
10,000-29,999	11	0.7	116	9.5	73	26	17
30,000-49,999	2	0.1	98	8.0	93	5	(1/)
50,000 and over	4	0.3	412	33.7	322	85	5
All classified ownerships	1,582	100.0	1,220	100.0	706	399	115
Unclassified	-	-	65	-	25	19	21
Total acreage	-	-	1,285	-	731	418	136

1/ Less than 500 acres.

Table 5.- Commercial forest land, by type of ownership and by timber type, 1951

Type of ownership	Total		Timber type		
			Pine	Fir	Pine--Douglas-fir--Fir
	Thousand acres	Pct.	----- Thousand acres -----		
National Forest	422	33.4	108	10	304
Indian land	7	0.6	6	-	1
Other Federal	77	6.1	27	-	50
State Forest	10	0.8	(1/)	-	10
Tax-Deeded	15	1.2	3	1	11
Other State	1	0.1	-	-	1
Timber-operating company	197	15.6	72	-	125
Timber-holding company	156	12.4	16	-	140
Timber-operating individual	123	9.7	26	-	97
Timber-holding individual	45	3.6	6	-	39
Range livestock farming company	4	0.3	-	-	4
Range livestock farming individual	52	4.1	30	-	22
Other farmers	27	2.1	10	-	17
Recreational property owners	66	5.2	6	2	58
Other classified owners	61	4.8	30	-	31
Unclassified	(1/)	-	-	-	(1/)
All types	1,263	100.0	340	13	910

1/ Less than 500 acres.

Table 6.- Privately owned commercial forest land, by size of ownership and by timber type, 1951

Size of ownership	Total		Timber type		
			Pine	Fir	Pine--Douglas-fir--Fir
Acres	Thousand acres	Pct.	----- Thousand acres -----		
1- 179	43	6.1	15	1	27
180- 379	22	3.1	12	-	10
380- 699	28	4.0	12	-	16
700- 1,299	26	3.7	15	-	11
1,300- 2,599	22	3.1	13	-	9
2,600- 4,999	47	6.7	12	-	35
5,000- 9,999	30	4.3	4	-	26
10,000-29,999	73	10.3	5	-	68
30,000-49,999	93	13.2	11	1	81
50,000 and over	322	45.5	84	-	238
All classified ownerships	706	100.0	183	2	521
Unclassified	25	-	13	-	12
Total acreage	731	-	196	2	533

Table 7.- Commercial forest land, by type of ownership and by age class of timber, 1951

Type of ownership	Total		Age class					
			Old growth	Old growth-young growth	Young growth-old growth	Large young growth	Small young growth	Non-stocked 1/
	Thousand acres	Pct.	Thousand acres					
National Forest	422	33.4	6	166	140	15	23	72
Indian land	7	0.6	-	1	3	1	1	1
Other Federal	77	6.1	-	12	22	19	5	19
State Forest	10	0.8	-	4	1	1	3	1
Tax-deeded	15	1.2	1	4	6	1	1	2
Other State	1	0.1	(2/)	-	1	-	-	(2/)
Timber-operating company	197	15.6	2	73	82	17	11	12
Timber-holding company	156	12.4	2	55	49	20	5	25
Timber-operating individual	123	9.7	1	22	66	19	11	4
Timber-holding individual	45	3.6	(2/)	18	19	4	2	2
Range livestock farming company	4	0.3	-	(2/)	1	-	-	3
Range livestock farming individual	52	4.1	1	4	13	22	6	6
Other farmers	27	2.1	-	6	6	8	3	4
Recreational property owners	66	5.2	1	23	23	6	2	11
Other classified owners	61	4.8	-	9	15	20	7	10
Unclassified	(2/)	-	-	-	(2/)	-	-	(2/)
All types	1,263	100.0	14	397	447	153	80	172

1/ Commercial forest land nonstocked with commercial conifers but covered primarily with hardwoods and chaparral.

2/ Less than 500 acres.

AGE CLASSES OF TIMBER STANDS ON COMMERCIAL FOREST LAND

Old growth

Young growth – old growth

Large young growth

Small young growth

Table 8.- Privately owned commercial forest land, by size of ownership and by age class of timber, 1951

Size of ownership	Total		Age class					
			Old growth	Old growth-young growth	Young growth-old growth	Large young growth	Small young growth	Non-stocked
Acres	Thousand acres	Pct.	Thousand acres					
1- 179	43	6.1	-	7	13	14	3	6
180- 379	22	3.1	(1/)	3	6	7	2	4
380- 699	28	4.0	1	6	6	8	2	5
700- 1,299	26	3.7	-	2	10	9	3	2
1,300- 2,599	22	3.1	(1/)	2	7	7	3	3
2,600- 4,999	47	6.7	1	11	16	7	3	9
5,000- 9,999	30	4.3	(1/)	8	13	5	3	1
10,000-29,999	73	10.3	(1/)	25	25	13	6	4
30,000-49,999	93	13.2	-	33	40	6	4	10
50,000 and over	322	45.5	5	109	131	30	15	32
All classified ownerships	706	100.0	7	206	267	106	44	76
Unclassified	25	-	-	4	7	10	3	1
Total acreage	731	-	7	210	274	116	47	77

1/ Less than 500 acres.

Table 9.- Commercial forest land, by age class of timber and by density of stand, 1951

Age class	Total	Density of stand			
		Dense and semidense	Open	Very open	Non-stocked
	---------- Thousand acres ----------				
Old growth	14	2	7	5	-
Old growth-young growth	397	146	155	96	-
Young growth-old growth	447	190	185	72	-
Large young growth	153	48	54	51	-
Small young growth	80	19	40	21	-
Nonstocked	172	-	-	-	172
Total	1,263	405	441	245	172

Table 10.- Commercial forest land, by timber type and by site quality, 1951

Timber type	Total	Site quality		
		High	Medium	Low
	---------- Thousand acres ----------			
Pine	340	30	192	118
Fir	13	1	8	4
Pine--Douglas-fir--Fir	910	285	479	146
All types	1,263	316	679	268

Table 11.- Reserved commercial forest land,[1/] by timber type and by age class of timber, 1951

Timber type	Total	Age class					
		Old growth	Old growth-young growth	Young growth-old growth	Large young growth	Small young growth	Non-stocked
	Thousand acres						
Pine	2	-	1	1	-	-	-
Fir	28	3	15	10	(2/)	(2/)	-
Pine--Douglas-fir--Fir	19	-	9	6	1	2	1
Lodgepole pine	4	-	1	3	-	-	-
Total	53	3	26	20	1	2	1

1/ Commercial forest land in National and State Parks.
2/ Less than 500 acres.

Table 12.- Commercial forest land area, by timber type, stand-size class, degree of stocking, and ownership, 1951

Timber type and stand-size class[1]	All areas			Degree of stocking[2] and ownership											
				Well-stocked			Medium-stocked			Poorly stocked			Nonstocked		
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private
	Thousand acres														
Pine															
Old-growth saw timber	220	103	117	77	26	51	106	57	49	37	20	17	-	-	-
Young-growth saw timber	63	15	48	17	3	14	27	6	21	19	6	13	-	-	-
Pole timber	19	6	13	4	3	1	10	1	9	5	2	3	-	-	-
Nonstocked	38	20	18	-	-	-	-	-	-	-	-	-	38	20	18
Total	340	144	196	98	32	66	143	64	79	61	28	33	38	20	18
Fir															
Old-growth saw timber	8	7	1	5	4	1	3	3	(3/)	-	-	-	-	-	-
Young-growth saw timber	1	(3/)	1	(3/)	(3/)	-	1	-	1	-	-	-	-	-	-
Pole timber	2	2	(3/)	1	1	-	-	-	-	1	1	(3/)	-	-	-
Nonstocked	2	2	(3/)	-	-	-	-	-	-	-	-	-	2	2	(3/)
Total	13	11	2	6	5	1	4	3	1	1	1	(3/)	2	2	(3/)
Pine--Douglas-fir--Fir															
Old-growth saw timber	630	254	376	256	81	175	238	104	134	136	69	67	-	-	-
Young-growth saw timber	89	23	66	31	8	23	26	5	21	32	10	22	-	-	-
Pole timber	59	25	34	14	6	8	30	16	14	15	3	12	-	-	-
Nonstocked	132	75	57	-	-	-	-	-	-	-	-	-	132	75	57
Total	910	377	533	301	95	206	294	125	169	183	82	101	132	75	57
All types															
Old-growth saw timber	858	364	494	338	111	227	347	164	183	173	89	84	-	-	-
Young-growth saw timber	153	38	115	48	11	37	54	11	43	51	16	35	-	-	-
Pole timber	80	33	47	19	10	9	40	17	23	21	6	15	-	-	-
Nonstocked	172	97	75	-	-	-	-	-	-	-	-	-	172	97	75
Total	1,263	532	731	405	132	273	441	192	249	245	111	134	172	97	75

1/ See relationship of stand-size classes to age classes, page 17.
2/ To obtain degree of stocking, Survey density classes were converted as follows: dense and semidense -- well-stocked; open -- medium-stocked; and very open -- poorly stocked.
3/ Less than 500 acres.

PROCEDURES

Area Delineation

To determine the extent, location, and condition of all forest lands in Shasta County, aerial photographs were delineated on the basis of (1) present cover of vegetation, (2) suitability for growing timber crops, and (3) age class and density of timber stands. The minimum unit classified and mapped under the Federal Survey was 40 acres. However, under a cooperative agreement with the State Division of Forestry, classification and mapping were extended to a 10-acre minimum on lands outside the national forest boundary.

Segregation of lands suitable for growing timber crops from other lands was somewhat difficult, particularly where commercial conifers were entirely lacking. If these nonstocked areas were located in a timber zone where commercial conifers normally grow, they were classified as commercial forest land. While this assumption may be true in most cases, as verified by visible and historical evidence, soil surveys now in progress in other areas of California have demonstrated that some nonstocked areas have soils too shallow to grow timber. Inasmuch as the same situation probably exists throughout this county, some of the nonstocked areas classified in this report as commercial and reserved commercial forest land must remain in the doubtful category until soil surveys provide a basis for final classification.

Transfer to base maps

After photo delineation was completed, Timber Stand Maps were prepared by transferring photo classifications to 7-1/2-minute quadrangle size base maps at a common scale of 2 inches to the mile. Kind and density of vegetation, age structure, and density of coniferous timber stands, and other information pertinent to the forest resource were shown. As a final preparation for area measurement other related information such as political and economic subdivisions, ownership, and commercial timber type boundaries were marked along east-west transect lines spaced 2 miles apart. Because logging and fires have caused changes in the timber classification since the date of aerial photography, adjustments of age-density classes were made along these transect lines after a field examination. This was done so that class acreages when compiled would show conditions as of the inventory year.

Ownership determination

Information on land ownership in Shasta County was obtained from the county tax assessment rolls, and other official records of the County Assessor and Tax Collector, using a line sampling technique.1/

1/ Details of line sampling method used for estimating area and procedure for estimating number of owners are given in "A New Approach to Forest Ownership Surveys," by A. A. Hasel and Adon Poli, Land Economics, 25 (1): 1-10, Feb. 1949.

Ownership boundaries, taken from county plat maps, were marked along the transect lines drawn on the quadrangle base maps. The proportion of the total line traversing an ownership class was taken as the proportion of the total acreage in that particular class. This acreage was classified further by measuring the intercepts of the various classifications of vegetation and timber stands used in the Forest Survey.

Owners of properties traversed by the sample lines constituted the ownership sample. The property records of the county provided the address of the owners and the acreage of each parcel of land in the sample. The acreage figures were used to classify private ownerships and land area by size. Each sample owner was mailed a questionnaire card by the State Division of Forestry. Answers on these cards provided information used to classify the sample ownerships as to type of ownership. Similar information concerning the land of nonrespondents was obtained by a field followup, in which key informants were questioned in local public offices and in the communities in which the owners have their land.

Area measurement and compilation

To estimate areas, parallel lines spaced 2 miles apart were drawn mainly north and south (with a few east and west) on the quadrangle base maps. Acreage figures were then obtained by recording line intercept measurements of all pertinent subdivisions along each sample line transecting the quadrangles. These subdivisions included age, density, and type of timber stands, and type and size of ownership. The rates of total line length to total area for the quadrangle provided the factor to convert line segments in inches to area in acres. These acreages were then totaled by county, and adjusted, if necessary, to check with the 1940 Bureau of Census acreages by counties. Estimated acreage figures appearing in the tables were compiled and summarized by means of punch cards and card tabulating equipment.

Stand-size class determination

The national pattern established for the Forest Survey requires classification of commercial forest land into stand-size classes. To present California forest resource data in terms of stand-size classes, mapped age classes have been grouped as follows:

Age class	Stand-size class
Old growth Old growth-young growth Young growth-old growth	Old-growth saw timber
Large young growth	Young-growth saw timber
Small young growth	Pole timber
Nonstocked	Nonstocked

Forest stands classified as saw timber by this grouping conform closely to the Forest Survey definitions. Areas of seedlings and saplings are not shown separately, as these areas occurred in such small and widely scattered units that separate photo classification was not practicable. These areas were included with other stand-size classes, chiefly pole timber and nonstocked.

Site quality determination

Three broad site classes -- high, medium, and low -- were used to express the relative capacity of commercial forest land to produce timber crops. Two hundred nineteen separate field-site determinations, well distributed over the three major timber types, were grouped into three broad classes. For each type the number of site determinations in each site class was expressed as a percentage of all observations within the type. These percentages were then applied to the total area by type to provide estimates of relative site quality.

The relationship between the broad site quality classes and site class and site index ratings of commercial forest land is shown in the following tabulation and explained in the appended footnotes.

Broad rating	All types except Douglas-fir		Douglas-fir types	
	Site class[1/]	Site index[2/]	Site class[3/]	Site index[4/]
High	IA	200	I	200
			II	170
	I	175	III	140
Medium	II	150		
	III	125	IV	110
Low	IV	100		
	V	75	V	80

1/ According to D. Dunning in Station Research Note No. 28, December 1, 1942, "A Site Classification for the Mixed-Conifer Selection Forests of the Sierra Nevada," California Forest and Range Experiment Station.

2/ The total height that the average dominant trees reach at 300 years of age.

3/ According to R. E. McArdle and W. H. Meyer in "The Yield of Douglas-fir in the Pacific Northwest." U. S. Dept. Agr. Tech. Bull. 201. October 1930.

4/ The total height that average dominant Douglas-fir trees reach at 100 years of age.

ACCURACY OF ESTIMATE

Estimates of acreages in the various classes of land as determined by Forest Survey procedures are subject to two general types of errors: (1) Nonsampling errors in photo classification, mapping, tabulation, computation, and compilation, and (2) sampling errors which arise from taking a sample rather than making a complete inventory. Errors of the first type are kept to a minimum by frequent checking and close supervision of all field and office work. If these nonsampling errors are negligible or compensating, then the sampling errors provide measures of the reliability of the acreage estimates and can be computed by statistical methods. Magnitudes of the sampling errors depend on the intensity of the sample and the variability of the data.

For the principal classes of forest land of Shasta County, the sampling errors[2/] are as follows:

Class	Sampling error	
	Acres	Percent
Forest land	31,141	1.42
Commercial forest land	23,366	1.85
Noncommercial forest land	20,088	2.16

Statistics of forest area by age class, type, and ownership classes presented in this report are subject to increasing sampling errors as the class acreages decrease. A partial range of area sampling errors applicable to areas in this report is shown below:

Acres in class	Sampling error in percent
10,000	21.0
20,000	14.5
40,000	10.5
100,000	6.5
200,000	4.5
500,000	3.0
1,000,000	2.0
2,000,000	1.5

2/ For one standard error; that is, the changes are 2 in 3 that the class acreages as determined by 100-percent measurement lie within the limits of the calculated acreages plus and minus the amounts shown.

DEFINITION OF TERMS

Area

Forest land area. Includes (a) lands which are at least 10 percent stocked by trees of any size and capable of producing timber or other wood products, or influencing the climate or the water regime; (b) land from which the trees described in (a) have been removed to less than 10 percent stocking and which have not been developed for other use; (c) afforested areas; and (d) chaparral areas.

Commercial forest land area. Forest land which is (a) producing or capable of producing usable crops of wood (usually saw timber), (b) economically available now or prospectively, and (c) not withdrawn from timber utilization.

Noncommercial forest land area. Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order which otherwise qualifies as commercial forest land and (b) incapable of yielding wood products (usually saw timber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Chaparral land area. Lands that support heavily branched dwarf trees or shrubs, usually evergreen, the crown cover of which normally covers more than 50 percent of the ground and whose primary value is watershed protection. The more common chaparral constituents are species of Quercus, Cercocarpus, Garrya, Ceanothus, Arctostaphylos, and Adenostoma. Types dominated by such shrubs as Artemesia, Opuntia, Purshia, Guttierrezia or semidesert species are not commonly considered chaparral.

Nonforest land area. Land that does not qualify as forest land. Includes land that has never supported forest growth; land from which the forest has been removed to less than 10 percent stocking and developed for other use, such as grazing, agricultural, residential, or industrial; all land in thickly populated urban and suburban areas; and water classified as land by the Bureau of the Census.

Timber stand classifications

Age classes of commercial conifer stands3/ on commercial forest land:

1. Old growth. Mature trees4/ compose more than 80 percent of the conifer canopy.

3/ Stands composed of the following species, singly or in combination: Ponderosa pine, Douglas-fir, Jeffrey pine, sugar pine, true firs (red and white), incense cedar, western white pine, mountain hemlock, and lodgepole pine.

4/ All trees that can be considered as having passed their optimum growth.

2. Old growth-young growth. Mature trees compose from 50 to 80 percent of the conifer canopy.

3. Young growth-old growth. Mature trees compose 20 to 50 percent of the conifer canopy.

4. Young growth. Mature trees compose less than 20 percent of the conifer canopy.

   a. Large young growth. More than 20 percent of the immature trees are larger than 11.0 inches d.b.h.

   b. Small young growth. Eighty percent or more of the immature trees are less than 11 inches d.b.h.

Stand-size classes of timber stands on commercial forest land:

1. Saw-timber stands. Defined as stands having a minimum net volume per acre of 4,000 board feet, International 1/4-inch rule, in saw-timber trees (11.0 inches d.b.h. and larger for all species).

   a. Old-growth saw-timber stands. Saw-timber stands in which over 50 percent of the net board-foot volume is in old-growth saw-timber trees.

   b. Young-growth saw-timber stands. Saw-timber stands in which 50 percent or more of the net board-foot volume is in young-growth saw-timber trees.

2. Pole-timber stands. Defined as stands failing to meet the saw-timber stand specification, but at least 10 percent stocked with pole-timber and larger trees and with at least half the minimum stocking in pole-timber trees (5.0 to 10.9 inches d.b.h.).

3. Seedling and sapling stands. Stands not qualifying as either saw-timber or pole-timber stands, but having at least 10 percent stocking of trees of commercial species and with at least half the minimum stocking in seedling and sapling trees.

4. Nonstocked. Defined as areas of forest land not qualifying as saw-timber, pole-timber, or seedling and sapling stands.

Density classes of commercial conifer stands on commercial forest land:

1. Dense and semidense. Commercial conifers cover 50 percent or more of the ground space.

2. Open. Commercial conifers cover from 20 to 50 percent of the ground space.

3. Very open. Commercial conifers cover 5 to 20 percent of the ground space.

4. Nonstocked. Commercial conifers cover less than 5 percent of the ground space.

Timber type. An extensive area of commercial or withdrawn commercial forest land characterized by a predominant conifer species or group of conifer species. Other vegetation (such as hardwood and chaparral areas) and nonvegetation types (such as barren areas), or both, may also occur in subordinate amounts within the same area.

Commercial timber types:

a. Pine--Douglas-fir--Fir. Area with mixtures of the commercial pines and either Douglas-fir or the true firs in which the pines, Douglas-fir, and true firs each compose 20 percent or more of the commercial conifer cover.

b. Pine. Areas with ponderosa, Jeffrey, or sugar pine comprising more than 80 percent of the commercial conifer cover or mixtures of these pines with lodgepole pine, western white pine, or mountain hemlock in which the aforenamed pines comprise 20 percent or more of the commercial conifer cover.

c. Fir. Areas with true firs (white and California red) comprising more than 80 percent of the commercial conifer cover; or mixtures of the true firs and lodgepole pine, mountain hemlock, or western white pine, in which the true firs comprise 20 percent or more of the timber cover.

Other timber and vegetation types:

a. Coniferous woodland. Areas with such trees as knobcone pine, digger pine, juniper, and scattered and scrub trees or other conifer species, covering more than 5 percent of the ground space and predominant over hardwoods that may partly compose the cover.

b. Hardwoods (woodland). Areas with hardwood trees (oaks, madrone, etc.), covering more than 50 percent of the ground except where in mixture with commercial conifers or herbaceous vegetation.

c. Woodland-grass. Areas with hardwood trees and herbaceous vegetation occurring in mixture -- without commercial conifers -- and the trees covering from 5 to 80 percent of the ground area and predominant over minor conifers2/ present in the cover.

2/ Minor conifer species are knobcone pine, digger pine, juniper, western yew, and California nutmeg.

d. Shrub and herb types consist of the following, where not in mixture with minor conifers or hardwood:

1. Chaparral. Areas with such shrubs as manzanita, ceanothus, scrub oaks, etc., covering more than 50 percent of the ground.

2. Coastal sagebrush. Areas with such shrubs as California sagebrush, coyote brush, and wild buckwheat covering more than 50 percent of the ground.

3. Great Basin sagebrush. Areas with such shrubs as big sagebrush, bitterbrush, and saltbush covering more than 20 percent of the ground.

4. Grass. Areas with grasses and associated herbaceous vegetation covering more than 50 percent of the ground except where the type qualifies as woodland-grass.

Nonvegetation types:

a. Barren. Bare ground, rocky areas, river beds, mine dredgings, and talus essentially devoid of vegetation.

b. Cultivated, urban, and industrial. Areas that are under cultivation or are used for residential or industrial purposes.

Ownership classifications

National Forest. Federal lands which, by executive order or statute, have been designated as national forests, purchase units, or experimental areas or have been placed under the administration of the Forest Service.

National park. Federal lands which have been designated as national parks, monuments, or recreational areas and are administered by the National Park Service.

Indian land. Indian tribal lands and trust allotments. Lands held in trust by the Federal Government but administered and managed for Indian tribal groups or allotted in trust to individual Indians.

Other Federal. All other lands owned by the Federal Government not classed as national forest, national park, or Indian land.

State forest. State lands which have been designated as State forests and are administered by the State Division of Forestry.

Tax-deeded. Formerly privately owned land but now deeded to the State for nonpayment of taxes.

Other State. Lands in State ownership other than State forests or tax-deeded.

Timber-operating company. A corporation actively engaged in commercial logging and sawing of timber as a major enterprise.

Timber-holding company. A corporation holding timberland principally for future commercial timber operations. The timber may be held for the company's own future use or for sale to other operators.

Timber-operating individual. A person whose major enterprise is commercial timber operation. This includes individuals logging timber, operating a large or small sawmill, or splitting timber commercially for sale.

Timber-holding individual. A person holding timberland principally for future commercial timber operations. The timber may be held for his own future operations or for sale to other operators.

Range livestock farming company. A corporation engaged primarily in range livestock farming operations.

Range livestock farming individual. A person whose major enterprise is range livestock farming.

Other farmers. Persons or corporations that have farming as their major activity, but whose principal agricultural enterprise is not range livestock farming.

Recreational property owners. Persons or corporations holding land principally for recreational purposes.

Other classified owners. All other landowners whose classification is known but does not logically fit the classes listed above. Examples are owners of land held for residential purposes only, mining claims, and reservoir sites.

Unclassified. Land ownerships in urban, suburban, and industrial settlements that are too small to map and classify properly, and ownerships which for other reasons cannot be classified and placed in appropriate categories.

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